

DATE: March 4, 2013
WWM PERMIT NO.: HI13WWIP905

**PERMIT RATIONALE: APPLICATION FOR WASTEWATER MANAGEMENT
PERMIT**

PERMITTEE: HAWAIIAN EARTH RECYCLING LLC

FACILITY/SITE: WAIALUA COMPOSTING FACILITY

FACILITY/SITE ADDRESS

65-1101 Wilikina Drive
Waialua, Hawaii
Tax Map Key: (1)-6-5-002:026

PERMITTEE MAILING ADDRESS

Mr. Mark Cummings, VP Operations
91-400 Malakole Street
Kapolei, Hawaii 96707
Phone No.: (808) 682-5895
Fax No.: (808) 682-0762

PERMIT STATUS

The Permittee submitted an Individual Wastewater Management Permit application (dated October 12, 2012) for coverage of a composting facility which will produce Class A wastewater sludge compost using wastewater sludge from the Honouliuli and Kailua Regional Wastewater Treatment Plants (WWTPs).

The Director of Health (Director) proposes to issue a permit to produce Class A wastewater sludge compost. The Director has included in the proposed draft permit those terms and conditions which the Director determined are necessary to carry out the provisions of the Hawaii Revised Statutes, (HRS), Chapter 342D, and Hawaii Administrative Rules (HAR), Chapter 11-62.

SCOPE OF THE ACTIVITY AND LOCATION OF THE PROJECT

The proposed project is located at the Waialua Composting Facility ("Facility") on the Island of Oahu. The scope of the proposed project is to use wastewater sludge from the Honouliuli and Kailua Regional WWTPs to produce compost which can be applied to land as a amendment to improve soil productivity.

DESCRIPTION OF THE PROJECT

The wastewater sludge produced at the Honouliuli and Kailua Regional WWTPs will be hauled to the Waialua Composting Facility by haulers registered with the State. Unloading of wastewater sludge will be performed in an enclosed building. The wastewater sludge will be mixed with green waste and placed in aerated static piles (ASPs) termed "heaps." The wastewater sludge compost will be covered by Gore™ covers during all three phases of the composting process (High Rate Composting, Maturation, and Finishing). The finished wastewater sludge compost will be distributed in bulk. Class A wastewater sludge compost may be land applied without site restrictions.

WASTEWATER SLUDGE CRITERIA

The Environmental Protection Agency (EPA) has promulgated regulations for the use and disposal of wastewater sludge in 40 Code of Federal Regulations (CFR) Part 503. In addition, the Director has also promulgated administrative rules for wastewater systems, including wastewater sludge use and disposal, in Chapter 11-62, HAR. The Director has considered the criteria established in both the federal and state regulations and has determined that the Facility and the land application of the wastewater sludge compost as a soil amendment will not endanger human health or the environment. Therefore, based on current information, the Director proposes to issue the permit.

PERMIT CONDITIONS

The Director has considered the permit conditions for wastewater sludge associated with the Facility, established pursuant to the Federal Water Pollution Control Act, Federal Clean Water Act, and the HRS. The Director has determined that the operation of the wastewater sludge composting facility will not endanger human health and the environment when the Permittee complies with the conditions of the permit. Therefore, based on current information, the Director proposes to issue the permit.

PROPOSED DETERMINATIONS

A. General Conditions

1. The Permittee shall comply with all Federal and State regulations, and any National Pollutant Discharge Elimination System (NPDES), Underground Injection Control (UIC), and Solid Waste permits issued to the Facility by the Department of Health.
2. The Permittee shall comply with HAR, Chapter 11-62, Appendix A, Individual and General Permit Standard Conditions (attached).
3. The Permittee shall retain a copy of the permit application, the individual permit, and the Operations Manual at the Facility and comply with all materials submitted in and with the permit application.
4. All wastewater pumpers and haulers that bring wastewater sludge to the Facility shall be registered with the State. Copies of the wastewater sludge manifests shall be made available to the Director upon request.
5. The Permittee shall submit an Operations Manual within sixty (60) days of the permit issuance. The Operations Manual shall include all sampling locations, sampling protocols, procedures for calibrating thermometers, and a sample label.
6. The Permittee shall notify the Director, in writing, of any changes to information on file with the Department of Health as soon as changes arise. A revised Operations Manual reflecting these changes shall be submitted for the Director's review and approval prior to implementation. Depending on the extent of the proposed changes, a modification to this permit may be required.

7. The Permittee shall submit a copy of all requests for test analyses, chain of custody forms, and test analyses results, including all test results that do not meet the requirements with each report. The Permittee shall submit signed copies of all reports required by this permit to the Director at the following address or as otherwise specified:

Director of Health
Wastewater Branch
919 Ala Moana Boulevard, Room 309
Honolulu, Hawaii 96814

8. The Permittee shall include the following certification statement and signature on each submittal in accordance with §11-55-07(b), HAR:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment for knowing violations."

9. The Permittee shall include the Wastewater Management (WWM) permit number on each submittal. Failure to provide the assigned WWM permit number for this Facility on future correspondence or submittals may be a basis for delay of the processing of the document(s).

B. Special Conditions.

1. All wastewater sludge composting activities shall be conducted in accordance with the applicable portions of 40 CFR 503 and Chapter 11-62, HAR.

2. Pathogen Reduction.

- a. Pathogen reduction requirements for Class A wastewater sludge compost are based upon 40 CFR 503.32(a) and §§ 11-62-46(a)(6) and 11-62-46(d)(1)(B), HAR.
- b. The frequency of monitoring is based upon 40 CFR 503.16(a), Table 1, and Chapter 11-62, Appendix F, Table V, HAR (below).

Amount of Wastewater Sludge (or material derived from sludge) in Metric Tons per 365 day period, dry weight basis	Monitoring Frequency
Greater than zero, but less than 290	Once per year
Equal to or greater than 290, but less than 1,500	Once per quarter
Equal to or greater than 1,500, but less than 15,000	Once per 60 days
Equal to or greater than 15,000	Once per month

- c. Number of samples (seven) is based upon 11-62-46(a)(8)(i), HAR.
- d. The pathogen density limits for Class A wastewater sludge compost are based upon 40 CFR 503.32(a) and § 11-62-46(a)(8)(ii), HAR: The density of fecal coliform in each sample shall be less than 1,000 Most Probable Number (MPN) per gram of total solids (dry weight basis) or the density of Salmonella sp. bacteria in each sample shall be less than three (3) MPN per four (4) grams of total solids (dry weight basis).
- e. Pathogen reduction shall be accomplished using the in-vessel ASP composting method in compliance with 40 CFR 503.32(a) and §§ 11-62-46(a)(6) and 11-62-46(d)(1)(B), HAR.
- f. The Environmental Protection Agency (EPA) Pathogen Equivalency Committee (PEC) reviewed the Gore™ process and determined that it "meets the definition of Alternative 5, Use of a PFRP^a process." (See EPA PEC letter, attached.)

3. Vector Attraction Reduction (VAR).

- a. VAR requirements are based on 40 CFR 503.33(b)(5) and § 11-62-47, HAR.
- b. The wastewater sludge shall be treated in an aerobic process for 14 days or longer. During that time, the minimum temperature of the wastewater sludge shall be higher than 40 degrees Celsius (104 degrees Fahrenheit) and the average temperature of the sewage sludge shall be higher than 45 degrees Celsius (113 degrees Fahrenheit). Logs of the daily temperatures of each heap shall be submitted to the Director with the monthly report.
- c. VAR treatment may be done simultaneously with pathogen reduction treatment.

4. Pollutant Limits.

- a. The frequency of monitoring is based upon 40 CFR 503.16(a), Table 1, and Chapter 11-62, Appendix F, Table V, HAR (see ¶ 2.b, above).
- b. The pollutant concentration ceiling limits are based upon Chapter 11-62, Appendix F, Table IV, HAR (below).

Pollutant	Ceiling Limit (mg/kg, dry weight basis)
Arsenic	20
Cadmium	15
Chromium	200
Copper	1,500
Lead	300

^a Process to Further Reduce Pathogens

Pollutant	Ceiling Limit (mg/kg, dry weight basis)
Mercury	10
Molybdenum	15
Nickel	100
Selenium	25
Zinc	2,000

5. All wastewater sludge compost generated by the Permittee shall meet the Class A exceptional quality criteria specified in § 11-62-42(a), HAR. Distribution of wastewater sludge compost which does not meet the criteria for Class A exceptional quality is prohibited. Wastewater sludge compost that does not meet these criteria shall be reprocessed with a new batch of compost; disposed of in a municipal solid waste landfill in compliance with 40 CFR 258 and Chapter 11-58.1, HAR (as required by § 11-62-41(a)(2), HAR); or sent off site to another wastewater sludge treatment facility for further treatment in compliance with Chapter 11-62, HAR (as required by § 11-62-41(a)(4), HAR).
6. This permit allows the Facility to receive dewatered wastewater sludge from the Honouliuli and Kailua Regional Wastewater Treatment Plants (WWTPs). It is noted that sludge from Kailua Regional WWTP exceeded the ceiling limit for Molybdenum in 2010 and the quality of sludge from Honouliuli WWTP is highly variable. (See Honouliuli and Kailua Regional WWTP sludge quality data, attached.) Adding sludge from another WWTP will be considered a major modification of this permit.
7. **Sampling and Analysis.**
 - a. Wastewater sludge compost shall be monitored as required by 40 CFR 503.16(a) and § 11-62-42(b), HAR, at the monitoring frequency specified in Chapter 11-62, Appendix F, Table V, HAR (see ¶2.b, above).
 - b. Pathogen density must be monitored not more than sixty (60) days before land application or distribution as required in § 11-62-42(b).
 - c. Wastewater sludge compost shall be tested for pollutants using Test Methods for Evaluating Solid Waste Physical/Chemical Methods", EPA Publication SW-846 Test methods are based upon 40 CFR 503.8(b)(4).
 - d. Sampling procedures shall follow the protocol established in the Permittee's Sampling and Analysis Plan. These procedures shall be included in the Operations Manual.
8. **Storage and Handling.**
 - a. As required by 40 CFR 503.14(b) and § 11-62-43(h), HAR, no wastewater sludge shall be allowed to enter wetlands, state waters, or other waters of the United States.

- b. As required by § 11-62-02(1), HAR, wastewater sludge treatment, storage, reuse, or disposal shall not contaminate groundwater.
- c. As required by § 11-62-02(3), HAR, wastewater sludge treatment, storage, reuse, or disposal shall be performed in a manner as to minimize nuisances such as objectionable odors or flies.
- d. As required by § 11-62-41(c)(4), HAR, wastewater sludge containing PCBs equal to or greater than 50 mg/kg of total solids (dry weight basis) shall be disposed of in accordance with 40 CFR 761.
- e. The surface disposal requirements in 40 CFR 503 Subpart C and § 11-62-45, HAR, apply to sludge which has been stored on site for two (2) years.

9. Notification.

- a. As required by 40 CFR 503.12(d) and Chapter 11-62, HAR, the Permittee shall notify the applicer(s) in writing of the nitrogen, phosphorus, and potassium content of the wastewater sludge, and the applicers' requirements, including the application rates in § 11-62-42(e), HAR.
- b. As required by 40 CFR 503.12(i) and § 11-62-43(l), HAR, the Permittee must send notice prior to the initial shipment of wastewater sludge to the permitting authorities in the receiving State/Tribal Land if the wastewater sludge is to be shipped to another State/Tribal Land.

10. Records Retention.

- a. Wastewater sludge compost recordkeeping requirements are based upon 40 CFR 503.17(a)(2) and Chapter 11-62, Appendix A, Individual and General Permit Standard Conditions, HAR.
- b. Records regarding the wastewater sludge compost processing (including end-product transactions), including invoices, billings, and/or manifests, shall be maintained for a minimum of five (5) years. Copies shall be made available to the Director upon request.
- c. Records of temperature logs and all analytical testing data shall also be maintained for a minimum of five (5) years. Copies shall be made available to the Director upon request.

11. Reporting.

- a. Monthly Reports: The Permittee shall submit the information in Special Condition 14.a. no later than the 10th day of the following month. Monthly reporting is required because of the anticipated high volume of compost production. The Permittee may request a reduction in reporting frequency after one year of operation. The decision will be based on the consistency of the finished product. The minimum frequency shall be quarterly.
- b. Annual Reports: As required by § 11-62-43(j), HAR, the Permittee shall submit an annual report to the Director by February 19 of each year for the period covering the previous calendar year. The report shall include:

- i. A wastewater sludge accounting including the amount of wastewater sludge and wastewater sludge compost accumulated from the previous year, the amount of wastewater sludge (in dry metric tons) received from each facility, the amount of wastewater sludge compost distributed, the amount of wastewater sludge compost that did not meet the requirements of Special Conditions 3, 4, and 5 and the disposition of off spec compost as required in Special Condition 7.b, the amount of wastewater sludge landfilled, and the amount of wastewater sludge and wastewater sludge compost stored on site at the end of the year.
- ii. Names, mailing addresses, and street addresses of entities who received wastewater sludge for further treatment, storage, disposal in a municipal solid waste landfill, or for other use or disposal methods not covered above, and the volumes in dry metric tons delivered to each.
- iii. A completed Certification Form (Chapter 11-62, Form A, HAR).

12. Temperature Demonstration Project.

- a. Compliance with the pathogen and vector attraction reduction criteria may be met in Phase 1 of the composting process, subject to verification of minimum temperatures in the heap. After a minimum of 21 days of High Rate Composting in Phase 1, the heap is turned "inside out," covered, and composted for a minimum of 14 days in Phase 2. If any parts of the heap do not maintain the minimum temperatures (usually the toes of the heap) to achieve pathogen and vector attraction reduction during Phase 1, they will be in the middle of the heap (the hottest part) during Phase 2 and will be completely treated before progressing to Phase 3. Initially, pathogen and vector attraction reduction criteria must be met in both Phase 1 and Phase 2.
- b. The Permittee shall obtain special Gore™ covers with access to the toes of the heap and the temperature monitoring point specified in Chapter 11-58.1-41(2)(B), HAR, where they will measure the temperature daily in addition to monitoring the temperature at the standard Gore™ temperature probe location. A minimum of four (4) heaps must be monitored through both Phase 1 and Phase 2.
- c. The Permittee may submit the temperature data to the Director along with a request to drop the requirement to meet pathogen and vector attraction reduction in Phase 2. There is no regulatory requirement to meet pathogen and vector attraction reduction twice. If the Temperature Demonstration Project data shows that all parts of the heap achieve the temperatures necessary to meet the pathogen and vector attraction reduction criteria in Phase 1, then only Phase 1 temperatures need to be monitored to demonstrate compliance.

Attachments:

1. HAR, Chapter 11-62, Appendix A, Individual and General Permit Standard Conditions
2. Environmental Protection Agency (EPA) Pathogen Equivalency Committee (PEC) letter dated April 29, 2013
3. Honouliuli and Kailua Regional WWTP Sludge Data

DATE: March 4, 2013
WWM PERMIT NO.: HI13WWIP905

**PERMIT RATIONALE: APPLICATION FOR WASTEWATER MANAGEMENT
PERMIT**

PERMITTEE: HAWAIIAN EARTH RECYCLING LLC

FACILITY/SITE: WAIALUA COMPOSTING FACILITY

FACILITY/SITE ADDRESS

65-1101 Wilikina Drive
Waialua, Hawaii
Tax Map Key: (1)-6-5-002:026

PERMITTEE MAILING ADDRESS

Mr. Mark Cummings, VP Operations
91-400 Malakole Street
Kapolei, Hawaii 96707
Phone No.: (808) 682-5895
Fax No.: (808) 682-0762

PERMIT STATUS

The Permittee submitted an Individual Wastewater Management Permit application (dated October 12, 2012) for coverage of a composting facility which will produce Class A wastewater sludge compost using wastewater sludge from the Honouliuli and Kailua Regional Wastewater Treatment Plants (WWTPs).

The Director of Health (Director) proposes to issue a permit to produce Class A wastewater sludge compost. The Director has included in the proposed draft permit those terms and conditions which the Director determined are necessary to carry out the provisions of the Hawaii Revised Statutes, (HRS), Chapter 342D, and Hawaii Administrative Rules (HAR), Chapter 11-62.

SCOPE OF THE ACTIVITY AND LOCATION OF THE PROJECT

The proposed project is located at the Waialua Composting Facility ("Facility") on the Island of Oahu. The scope of the proposed project is to use wastewater sludge from the Honouliuli and Kailua Regional WWTPs to produce compost which can be applied to land as a amendment to improve soil productivity.

DESCRIPTION OF THE PROJECT

The wastewater sludge produced at the Honouliuli and Kailua Regional WWTPs will be hauled to the Waialua Composting Facility by haulers registered with the State. Unloading of wastewater sludge will be performed in an enclosed building. The wastewater sludge will be mixed with green waste and placed in aerated static piles (ASPs) termed "heaps." The wastewater sludge compost will be covered by Gore™ covers during all three phases of the composting process (High Rate Composting, Maturation, and Finishing). The finished wastewater sludge compost will be distributed in bulk. Class A wastewater sludge compost may be land applied without site restrictions.

WASTEWATER SLUDGE CRITERIA

The Environmental Protection Agency (EPA) has promulgated regulations for the use and disposal of wastewater sludge in 40 Code of Federal Regulations (CFR) Part 503. In addition, the Director has also promulgated administrative rules for wastewater systems, including wastewater sludge use and disposal, in Chapter 11-62, HAR. The Director has considered the criteria established in both the federal and state regulations and has determined that the Facility and the land application of the wastewater sludge compost as a soil amendment will not endanger human health or the environment. Therefore, based on current information, the Director proposes to issue the permit.

PERMIT CONDITIONS

The Director has considered the permit conditions for wastewater sludge associated with the Facility, established pursuant to the Federal Water Pollution Control Act, Federal Clean Water Act, and the HRS. The Director has determined that the operation of the wastewater sludge composting facility will not endanger human health and the environment when the Permittee complies with the conditions of the permit. Therefore, based on current information, the Director proposes to issue the permit.

PROPOSED DETERMINATIONS

A. General Conditions

1. The Permittee shall comply with all Federal and State regulations, and any National Pollutant Discharge Elimination System (NPDES), Underground Injection Control (UIC), and Solid Waste permits issued to the Facility by the Department of Health.
2. The Permittee shall comply with HAR, Chapter 11-62, Appendix A, Individual and General Permit Standard Conditions (attached).
3. The Permittee shall retain a copy of the permit application, the individual permit, and the Operations Manual at the Facility and comply with all materials submitted in and with the permit application.
4. All wastewater pumpers and haulers that bring wastewater sludge to the Facility shall be registered with the State. Copies of the wastewater sludge manifests shall be made available to the Director upon request.
5. The Permittee shall submit an Operations Manual within sixty (60) days of the permit issuance. The Operations Manual shall include all sampling locations, sampling protocols, procedures for calibrating thermometers, and a sample label.
6. The Permittee shall notify the Director, in writing, of any changes to information on file with the Department of Health as soon as changes arise. A revised Operations Manual reflecting these changes shall be submitted for the Director's review and approval prior to implementation. Depending on the extent of the proposed changes, a modification to this permit may be required.

7. The Permittee shall submit a copy of all requests for test analyses, chain of custody forms, and test analyses results, including all test results that do not meet the requirements with each report. The Permittee shall submit signed copies of all reports required by this permit to the Director at the following address or as otherwise specified:

Director of Health
Wastewater Branch
919 Ala Moana Boulevard, Room 309
Honolulu, Hawaii 96814

8. The Permittee shall include the following certification statement and signature on each submittal in accordance with §11-55-07(b), HAR:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment for knowing violations."

9. The Permittee shall include the Wastewater Management (WWM) permit number on each submittal. Failure to provide the assigned WWM permit number for this Facility on future correspondence or submittals may be a basis for delay of the processing of the document(s).

B. Special Conditions.

1. All wastewater sludge composting activities shall be conducted in accordance with the applicable portions of 40 CFR 503 and Chapter 11-62, HAR.

2. Pathogen Reduction.

- a. Pathogen reduction requirements for Class A wastewater sludge compost are based upon 40 CFR 503.32(a) and §§ 11-62-46(a)(6) and 11-62-46(d)(1)(B), HAR.
- b. The frequency of monitoring is based upon 40 CFR 503.16(a), Table 1, and Chapter 11-62, Appendix F, Table V, HAR (below).

Amount of Wastewater Sludge (or material derived from sludge) in Metric Tons per 365 day period, dry weight basis	Monitoring Frequency
Greater than zero, but less than 290	Once per year
Equal to or greater than 290, but less than 1,500	Once per quarter
Equal to or greater than 1,500, but less than 15,000	Once per 60 days
Equal to or greater than 15,000	Once per month

- c. Number of samples (seven) is based upon 11-62-46(a)(8)(i), HAR.
- d. The pathogen density limits for Class A wastewater sludge compost are based upon 40 CFR 503.32(a) and § 11-62-46(a)(8)(ii), HAR: The density of fecal coliform in each sample shall be less than 1,000 Most Probable Number (MPN) per gram of total solids (dry weight basis) or the density of Salmonella sp. bacteria in each sample shall be less than three (3) MPN per four (4) grams of total solids (dry weight basis).
- e. Pathogen reduction shall be accomplished using the in-vessel ASP composting method in compliance with 40 CFR 503.32(a) and §§ 11-62-46(a)(6) and 11-62-46(d)(1)(B), HAR.
- f. The Environmental Protection Agency (EPA) Pathogen Equivalency Committee (PEC) reviewed the Gore™ process and determined that it "meets the definition of Alternative 5, Use of a PFRP^a process." (See EPA PEC letter, attached.)

3. Vector Attraction Reduction (VAR).

- a. VAR requirements are based on 40 CFR 503.33(b)(5) and § 11-62-47, HAR.
- b. The wastewater sludge shall be treated in an aerobic process for 14 days or longer. During that time, the minimum temperature of the wastewater sludge shall be higher than 40 degrees Celsius (104 degrees Fahrenheit) and the average temperature of the sewage sludge shall be higher than 45 degrees Celsius (113 degrees Fahrenheit). Logs of the daily temperatures of each heap shall be submitted to the Director with the monthly report.
- c. VAR treatment may be done simultaneously with pathogen reduction treatment.

4. Pollutant Limits.

- a. The frequency of monitoring is based upon 40 CFR 503.16(a), Table 1, and Chapter 11-62, Appendix F, Table V, HAR (see ¶ 2.b, above).
- b. The pollutant concentration ceiling limits are based upon Chapter 11-62, Appendix F, Table IV, HAR (below).

Pollutant	Ceiling Limit (mg/kg, dry weight basis)
Arsenic	20
Cadmium	15
Chromium	200
Copper	1,500
Lead	300

^a Process to Further Reduce Pathogens

Pollutant	Ceiling Limit (mg/kg, dry weight basis)
Mercury	10
Molybdenum	15
Nickel	100
Selenium	25
Zinc	2,000

5. All wastewater sludge compost generated by the Permittee shall meet the Class A exceptional quality criteria specified in § 11-62-42(a), HAR. Distribution of wastewater sludge compost which does not meet the criteria for Class A exceptional quality is prohibited. Wastewater sludge compost that does not meet these criteria shall be reprocessed with a new batch of compost; disposed of in a municipal solid waste landfill in compliance with 40 CFR 258 and Chapter 11-58.1, HAR (as required by § 11-62-41(a)(2), HAR); or sent off site to another wastewater sludge treatment facility for further treatment in compliance with Chapter 11-62, HAR (as required by § 11-62-41(a)(4), HAR).
6. This permit allows the Facility to receive dewatered wastewater sludge from the Honouliuli and Kailua Regional Wastewater Treatment Plants (WWTPs). It is noted that sludge from Kailua Regional WWTP exceeded the ceiling limit for Molybdenum in 2010 and the quality of sludge from Honouliuli WWTP is highly variable. (See Honouliuli and Kailua Regional WWTP sludge quality data, attached.) Adding sludge from another WWTP will be considered a major modification of this permit.
7. **Sampling and Analysis.**
 - a. Wastewater sludge compost shall be monitored as required by 40 CFR 503.16(a) and § 11-62-42(b), HAR, at the monitoring frequency specified in Chapter 11-62, Appendix F, Table V, HAR (see ¶2.b, above).
 - b. Pathogen density must be monitored not more than sixty (60) days before land application or distribution as required in § 11-62-42(b).
 - c. Wastewater sludge compost shall be tested for pollutants using Test Methods for Evaluating Solid Waste Physical/Chemical Methods", EPA Publication SW-846 Test methods are based upon 40 CFR 503.8(b)(4).
 - d. Sampling procedures shall follow the protocol established in the Permittee's Sampling and Analysis Plan. These procedures shall be included in the Operations Manual.
8. **Storage and Handling.**
 - a. As required by 40 CFR 503.14(b) and § 11-62-43(h), HAR, no wastewater sludge shall be allowed to enter wetlands, state waters, or other waters of the United States.

- b. As required by § 11-62-02(1), HAR, wastewater sludge treatment, storage, reuse, or disposal shall not contaminate groundwater.
- c. As required by § 11-62-02(3), HAR, wastewater sludge treatment, storage, reuse, or disposal shall be performed in a manner as to minimize nuisances such as objectionable odors or flies.
- d. As required by § 11-62-41(c)(4), HAR, wastewater sludge containing PCBs equal to or greater than 50 mg/kg of total solids (dry weight basis) shall be disposed of in accordance with 40 CFR 761.
- e. The surface disposal requirements in 40 CFR 503 Subpart C and § 11-62-45, HAR, apply to sludge which has been stored on site for two (2) years.

9. Notification.

- a. As required by 40 CFR 503.12(d) and Chapter 11-62, HAR, the Permittee shall notify the applier(s) in writing of the nitrogen, phosphorus, and potassium content of the wastewater sludge, and the appliers' requirements, including the application rates in § 11-62-42(e), HAR.
- b. As required by 40 CFR 503.12(i) and § 11-62-43(l), HAR, the Permittee must send notice prior to the initial shipment of wastewater sludge to the permitting authorities in the receiving State/Tribal Land if the wastewater sludge is to be shipped to another State/Tribal Land.

10. Records Retention.

- a. Wastewater sludge compost recordkeeping requirements are based upon 40 CFR 503.17(a)(2) and Chapter 11-62, Appendix A, Individual and General Permit Standard Conditions, HAR.
- b. Records regarding the wastewater sludge compost processing (including end-product transactions), including invoices, billings, and/or manifests, shall be maintained for a minimum of five (5) years. Copies shall be made available to the Director upon request.
- c. Records of temperature logs and all analytical testing data shall also be maintained for a minimum of five (5) years. Copies shall be made available to the Director upon request.

11. Reporting.

- a. Monthly Reports: The Permittee shall submit the information in Special Condition 14.a. no later than the 10th day of the following month. Monthly reporting is required because of the anticipated high volume of compost production. The Permittee may request a reduction in reporting frequency after one year of operation. The decision will be based on the consistency of the finished product. The minimum frequency shall be quarterly.
- b. Annual Reports: As required by § 11-62-43(j), HAR, the Permittee shall submit an annual report to the Director by February 19 of each year for the period covering the previous calendar year. The report shall include:

- i. A wastewater sludge accounting including the amount of wastewater sludge and wastewater sludge compost accumulated from the previous year, the amount of wastewater sludge (in dry metric tons) received from each facility, the amount of wastewater sludge compost distributed, the amount of wastewater sludge compost that did not meet the requirements of Special Conditions 3, 4, and 5 and the disposition of off spec compost as required in Special Condition 7.b, the amount of wastewater sludge landfilled, and the amount of wastewater sludge and wastewater sludge compost stored on site at the end of the year.
- ii. Names, mailing addresses, and street addresses of entities who received wastewater sludge for further treatment, storage, disposal in a municipal solid waste landfill, or for other use or disposal methods not covered above, and the volumes in dry metric tons delivered to each.
- iii. A completed Certification Form (Chapter 11-62, Form A, HAR).

12. Temperature Demonstration Project.

- a. Compliance with the pathogen and vector attraction reduction criteria may be met in Phase 1 of the composting process, subject to verification of minimum temperatures in the heap. After a minimum of 21 days of High Rate Composting in Phase 1, the heap is turned "inside out," covered, and composted for a minimum of 14 days in Phase 2. If any parts of the heap do not maintain the minimum temperatures (usually the toes of the heap) to achieve pathogen and vector attraction reduction during Phase 1, they will be in the middle of the heap (the hottest part) during Phase 2 and will be completely treated before progressing to Phase 3. Initially, pathogen and vector attraction reduction criteria must be met in both Phase 1 and Phase 2.
- b. The Permittee shall obtain special Gore™ covers with access to the toes of the heap and the temperature monitoring point specified in Chapter 11-58.1-41(2)(B), HAR, where they will measure the temperature daily in addition to monitoring the temperature at the standard Gore™ temperature probe location. A minimum of four (4) heaps must be monitored through both Phase 1 and Phase 2.
- c. The Permittee may submit the temperature data to the Director along with a request to drop the requirement to meet pathogen and vector attraction reduction in Phase 2. There is no regulatory requirement to meet pathogen and vector attraction reduction twice. If the Temperature Demonstration Project data shows that all parts of the heap achieve the temperatures necessary to meet the pathogen and vector attraction reduction criteria in Phase 1, then only Phase 1 temperatures need to be monitored to demonstrate compliance.

Attachments:

1. HAR, Chapter 11-62, Appendix A, Individual and General Permit Standard Conditions
2. Environmental Protection Agency (EPA) Pathogen Equivalency Committee (PEC) letter dated April 29, 2013
3. Honouliuli and Kailua Regional WWTP Sludge Data

CHAPTER 11-62 APPENDIX A

INDIVIDUAL AND GENERAL PERMIT STANDARD CONDITIONS

April 15, 1997

Appendix A, Individual and general permit standard conditions

1. Duty to comply
2. Compliance with sludge standards
3. Compliance with wastewater effluent standards
4. Compliance with water quality standards
5. Clean Water Act (CWA) penalties
6. Signatory and certification requirement
7. Duty to reapply
8. Need to halt or reduce activity not a defense
9. Duty to mitigate
10. Proper operation and maintenance
11. Permit actions
12. Property rights
13. Duty to provide information
14. Inspection and entry
15. Sampling requirements and definitions
16. Monitoring and recordkeeping
17. Notice requirements
18. Reopener clause
19. Transfers by modification
20. Automatic transfers
21. Minor modification of permits
22. Modification or revocation and reissuance of permits
23. Termination of permits
24. Availability of reports
25. Civil and criminal liability
26. State law
27. Severability

The following conditions apply to both individual and general permits unless otherwise specified.

"Permittee" refers to a person to whom an individual

CHAPTER 11-62 APPENDIX A

permit or a notice of general permit coverage has been issued.

1. **Duty to comply.** Permittees shall comply with and are subject to §11-62-06(q).
2. **Compliance with sludge standards.** Permittees shall comply with HAR chapter 11-62, subchapter 4.
3. **Compliance with wastewater effluent standards.** Permittees treating wastewater shall comply with §11-62-26 and, if applicable, §11-26-27.
4. **Compliance with water quality standards.** Permittees shall not cause or contribute to any violation of applicable sections of HAR chapter 11-54.
5. **Clean Water Act (CWA) penalties.** The monetary fines and imprisonment terms referred to in 40 CFR §§501.15(b)(3), on CWA §309; 501.15(b)(11)(ii), on false statement, representation, or certification; and §501.15(b)(10), on falsification, tampering with, or rendering inaccurate any monitoring device or method; all apply, in addition to any state penalties.
6. **Signatory and certification requirements.** Each notice of intent, permit application, report, notice, and any information submitted to the director shall be signed and certified as required by §11-62-52.
7. **Duty to reapply.** Permittees shall comply with §11-62-57.04.
8. **Need to halt or reduce activity not a defense.** It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted

CHAPTER 11-62 APPENDIX A

activity in order to maintain compliance with the conditions of this permit.

9. **Duty to mitigate.** Permittees shall comply with §11-62-06(j).
10. **Proper operation and maintenance.** Permittees shall comply with §11-62-06(e).
11. **Permit actions.** This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.
12. **Property rights.** This permit does not convey any property rights of any sort, or any exclusive privilege.
13. **Duty to provide information.** The permittee shall furnish to the director, within a reasonable time, any information which the director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The permittee shall also furnish to the director, upon request, copies of records required to be kept by this permit.
14. **Inspection and entry.** The permittee shall allow the director, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:
 - a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

CHAPTER 11-62 APPENDIX A

- b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- c. Inspect at reasonable times any facility, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
- d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances, parameters, or practices at any location.

15. Sampling requirements.

- a. Sampling points. All samples shall be taken at the monitoring points specified in this permit and, unless otherwise specified, before final use, disposal, or discharge. Monitoring points shall not be changed without notification to and the approval of the director. No use, disposal, or discharge is authorized which does not totally pass through the final monitoring point.
- b. Calibration. The permittee shall periodically calibrate and perform maintenance on all monitoring and analytical equipment used to monitor the pollutants, sludge, and other items specified by the director under this permit, at intervals which will ensure the accuracy of measurements, but no less than the manufacturer's recommended intervals or one year intervals (whichever comes first). Records of calibration shall be kept pursuant to section 13(b) of this general permit.

CHAPTER 11-62 APPENDIX A

16. Monitoring and recordkeeping.

- a. Monitoring results shall be reported at a frequency specified here or elsewhere in the permit, whichever is greater. The frequency of sampling shall be dependent on the size of the wastewater system, nature and effect of the wastewater, reclaimed water, and wastewater sludge use and disposal practices. At a minimum, the frequency shall be as required by §§11-62-26(a), 11-62-26(c), 11-62-28(a), and subchapter 4.
- b. Representative sampling. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activities listed in §§11-62-26(a), 11-62-26(c), 11-62-28(a), and subchapter 4.

As used in this section, a representative sample means that the content of the sample shall (1) be identical to the content of the substance sampled at the time of the sampling; (2) accurately represent the monitored item (for example, sampling to monitor final effluent quality shall accurately represent that quality, even though the sampling is done upstream of the discharge point); and (3) accurately represent the monitored item for the monitored time period (for example, sampling to represent monthly average effluent flows shall be taken at times and on days that cover significant variations).

Representative sampling may mean including weekends and storms and may mean taking more samples than the minimum number specified elsewhere in the permit. The burden of proving that sampling or monitoring is representative shall be on the permittee.

CHAPTER 11-62 APPENDIX A

- c. Record retention. The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least five (5) years from the date of the sample, measurement, report or application. This period may be extended by request of the director of health at any time.
- d. Records' content. Records of monitoring information shall include:
 - (1) The date, exact place, and time of sampling or measurements;
 - (2) The name of individual(s) who performed the sampling or measurements;
 - (3) The date(s) analyses were performed;
 - (4) The name of individual(s) who performed the analyses;
 - (5) The analytical techniques or methods used and if available, references and written procedures for these techniques or methods; and
 - (6) The results of such analyses, including bench sheets, instrument readouts, etc., used to determine these results.
- e. Monitoring procedures. Unless other procedures have been specified in this permit, monitoring shall be conducted according to test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 503.

17. Notice requirements.

CHAPTER 11-62 APPENDIX A

- a. Planned changes. The permittee shall give notice to the director as soon as possible of any planned physical alterations or additions to the permitted facility, or significant changes planned in the permittee's sludge use or disposal practice, where such alterations, additions, or changes may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.
- b. Anticipated noncompliance. The permittee shall give advance notice to the director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.
- c. Transfers. This permit is not transferable to any person except after notice to the director. The director may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the CWA.
- d. Other noncompliance reporting. The permittee shall report all instances of noncompliance. Reports of noncompliance shall if applicable follow the spill protocol of appendix C otherwise shall be submitted with the permittee's next self monitoring report or earlier if requested by the director or if required by an applicable standard for wastewater sludge use or disposal or condition of this permit.

CHAPTER 11-62 APPENDIX A

- e. Other information. Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the director, it shall promptly submit such facts or information.

18. Reopener clause.

- a. If the standards for wastewater and wastewater sludge applicable to the permittee's use, disposal, or discharge method are promulgated under the Clean Water Act, the Hawaii Revised Statutes, or the Hawaii Administrative Rules before the expiration date of this permit, and those standards are more stringent than the wastewater or wastewater sludge pollutant limits or acceptable management practices authorized in this permit, or controls a pollutant or practice not limited in this permit, this permit may be promptly modified or revoked and reissued to conform to the standards for wastewater or wastewater sludge use, disposal, or discharge by no later than the compliance deadline specified in the regulations establishing those standards, whether or not this permit has been modified or revoked and reissued.
- b. This permit shall be modified or revoked and reissued at any time if, on the basis of any new data, the director determines that continued wastewater or wastewater sludge use, disposal, or discharge may cause unreasonable degradation of the environment.
- c. The permittee shall comply with new standards for wastewater sludge use or disposal adopted in 40 CFR 503 during the term of the permit, if they are more

CHAPTER 11-62 APPENDIX A

stringent than the terms of the permit and chapter 11-62, even if this permit has not yet been modified to incorporate the standards.

19. **Transfers by modification.** Except as provided in condition 20 of these standard conditions, a permit may be transferred by the permittee to a new owner or operator only if the permit has been modified or revoked and reissued to identify the new permittee and incorporate such other requirements as may be necessary to assure compliance with the CWA.
20. **Automatic transfers.** As an alternative to transfers under condition 19 of these standard conditions, the director may authorize automatic transfer of any permit issued under this rule to a new permittee if:
 - a. The current permittee notifies the director at least 30 days in advance of the proposed transfer date in condition 20.c. of these standard conditions;
 - b. The notice includes a written agreement between the existing and new permittee containing a specific date for transfer of permit responsibility, coverage, and liability between them; and
 - c. The director does not notify the existing permittee and the proposed new permittee of the director's intent to modify or revoke and reissue the permit. If this notice is not received, the transfer is effective on the date specified in the agreement of condition 20.b of these standard conditions.
21. **Minor modification of permits.** Upon the consent of the permittee, the director may modify a permit to make the corrections or allowances for

CHAPTER 11-62 APPENDIX A

changes in the permitted activity listed in this section without following the procedures of §11-62-57.02. Any permit modification not processed as a minor modification under this section must be made for cause and with draft permit and public notice as required. Minor modifications may only:

- a. Correct typographical errors;
- b. Require more frequent monitoring or reporting by the permittee;
- c. Change an interim compliance date in a schedule of compliance, provided the new date is not more than 120 days after the date specified in the existing permit and does not interfere with attainment of the final compliance date requirement; and
- d. Allow for a change in ownership or operational control of a facility where the director determines that no other change in the permit is necessary, provided that a written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new permittee has been submitted to the director.

- 22. **Modification or revocation and reissuance of permits.** Permittees shall comply with and are subject to §11-62-57.02, except for minor modifications.
- 23. **Termination of permits.** Permittees are subject to §11-62-57.03 and general permittees are also subject to §11-62-55.03.
- 24. **Availability of reports.** Except for data determined to be confidential under HRS §342D-14, all reports prepared in accordance with the terms

CHAPTER 11-62 APPENDIX A

of this permit shall be available for public inspection at the offices of the director. As required by this rule, permit applications, permits, and effluent and wastewater sludge data shall not be considered confidential.

25. **Civil and criminal liability.** Nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance.
26. **State law.** Nothing in this permit shall be constructed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation.
27. **Severability.** The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, if held invalid, the application of such provision to other circumstances, and remainder of this permit, shall not be affected thereby.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL RISK MANAGEMENT RESEARCH LABORATORY
CINCINNATI, OH 45268

OFFICE OF
RESEARCH AND DEVELOPMENT

April 29, 2010

Brian L. Fuchs
Gore Cover Systems - North America
W. L. Gore & Associates, Inc
105 Vieve's Way
Elkton, MD 21921

Re: GORE® Cover Composting Technology

Dear Mr. Fuchs:

We have reviewed the documentation provided by W.L. Gore Associates regarding the GORE® Cover Composting Technology as applied for producing compost from municipal wastewater sludge. This includes a recent study conducted by W.L. Gore Associates documenting process conditions for the full scale operation of the compost cover system applied at the Greater Moncton Sewerage Commission located in New Brunswick, Canada. The draft report for this work was distributed to members of the U.S. Environmental Protection Agency's Pathogen Equivalency Committee (PEC) and select individuals from the State of Washington's Department of Ecology. We also reviewed additional documentation developed by W.L. Gore Associates on GORE® Cover Composting Technology applied to a number of other full scale applications. This report was entitled: "Using GORE® Cover Composting Technology for Producing a Class A Biosolids Compost" dated February 9, 2010.

As described, the GORE® Cover Composting Technology uses a 3 layer laminate, which contains as a middle layer an expanded polytetrafluoroethylene (ePTFE) membrane to cover static aerated piles to produce compost from municipal sludge. The composting system is conducted in three distinct phases described as: Phase 1: High Rate Composting - 28 Days; Phase 2: Maturation - 14 Days; and Phase 3: Finishing - 14 Days. The cover is used for Phase 1 and Phase 2 operations and is optional for Phase 3.

To produce Class A biosolids, aerated static piles and in-vessel systems must be maintained at a minimum operating temperature of 55°C (131°F) for at least 3 days. Furthermore, to meet 40 CFR Part 503 vector attraction reduction requirements using the "aerobic process" alternative, composting operations must ensure that the process lasts for 14 days or longer at a temperature greater than 40°C. In addition, the average temperature must be higher than 45°C.

In your February 9, 2010 submission you state that you are: "...seeking a recommendation of national equivalency from the EPA Pathogen Equivalency Committee (PEC) that GORE® Cover is capable of meeting and/or exceeding criteria for achieving Class A Biosolids as described in Alternative 5: Use of PFRP [503.32(a) (7) and (B) (1) of Appendix B]. in a covered aerated static pile without the use of a insulating layer of material (such as finished compost). The PEC agrees that your process meets the definition of Alternative 5, Use of a PFRP process. This does not relieve operators/managers from monitoring process operations to demonstrate that the time and temperature requirements as stipulated above are achieved. Moreover, this acknowledgement must not be construed as an endorsement or an exemption from seeking appropriate permits or meeting requirements imposed by state or federal authorities.

If you have questions regarding this matter, please contact me at 513-569-7348.

Sincerely your,



Mark C. Meckes
Senior Microbiologist and
Chair, U.S. EPA Pathogen Equivalency Committee

cc: PEC members
Rick Stevens, Office of Science and Technology
Regional Biosolids Coordinators
Daniel Thompson, Washington Department of Ecology

HONOLULU WWTP SLUDGE DATA

Parameter	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Moly.	Nickel	Selenium	Zinc	Annual
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	DMT
HAR 11-62	20	15	200	1,500	300	10	15	100	25	2,000	N/A
2009	0.54	0.24	9.1	108	3.9	0.61	1.4	6.2	1.6	187	3,846
2010	2.0	0.53	38.9	233	10.6	1.2	2.6	21.9	3.3	442	2,414
2011	4.7	1.7	41.3	547	27.1	2.8	11.5	22.8	8.7	1,200	2,361

Average	2.41	0.82	29.8	296	13.9	1.54	5.2	17.0	4.5	610	2,873.7
Std. Deviation	2.11	0.77	17.9	226	11.9	1.13	5.5	9.3	3.71	527	842.2
S.D./Average (%)*	87%	94%	60%	76%	86%	74%	107%	55%	82%	86%	0.3

*Shaded cells have a coefficient of variability greater than 50%.

KAILUA REGIONAL WWTP SLUDGE DATA

Parameter	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Moly.	Nickel	Selenium	Zinc	Annual
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	DMT
HAR 11-62	20	15	200	1,500	300	10	15	100	25	2,000	N/A
2009	7.4	1.7	53.0	300	26.6	2.6	13.0	27.8	7.0	1,230	893
2010	7.0	2.5	70.9	435	51.2	2.8	22.1	39.6	8.7	1,460	874
2011	6.6	2.0	66.7	318	36.1	2.5	12.2	42.4	5.5	1,230	693

Average	7.0	2.1	63.5	351	38.0	2.6	15.8	36.6	7.1	1307	820.2
Std. Deviation	0.4	0.4	9.4	73	12.4	0.2	5.5	7.7	1.6	133	110.3
S.D./Average (%)	6%	20%	15%	21%	33%	6%	35%	21%	23%	10%	13%